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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/417,767	10/14/1999	JUNYA KAKU	991181	7912

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EXAMINER

FLETCHER, JAMES A

ART UNIT	PAPER NUMBER
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2616

13

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/417,767

Applicant(s)

KAKU, JUNYA

Examiner

James A. Fletcher

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9 June 2004 have been fully considered but they are not persuasive.

In re page 8, applicant's representative states: "Figure 6 depicts these features, as is described in the corresponding portions of the specification."

The examiner does not find the terms "current" or "preceding" in that figure.

Further in re pages 8-9, the examiner notes that the term "preceding screen" appears before the term "current screen." It appears that what the "preceding screen" is preceding is the image signal of an object as noted in the first limitation. Later in the claim, the term "current screen" is introduced, but it is unclear to the examiner if that screen is of the image signal noted earlier in the claim, or what the relationship is between the "image signal" and the "current screen."

In re page 10, applicant's representative states: "Acharya always calculates the optimal compression for each current screen (not using the compression ratio of a preceding screen)."

The examiner respectfully disagrees. Acharya begins by calculating an compression ratio (the ratio of the uncompressed image data to the compressed image data) in order to fit a predetermined number of images into a fixed storage area. This compression ratio is used for all images, including previous and current images. What Acharya adaptively calculates is the quantization of the Discrete Wavelet Transform or

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other variable compression technique in order to achieve that calculated compression ratio, as is noted from Col 4 line 57 to Col 5, line 11 and Col 5, lines 17-20.

Further, the examiner makes reference to Acharya Fig. 2, wherein the compression ratio (R) in step 245 is calculated based on the available storage (X), the number of images to be captured (M), and the average size of the captured image (A). In step 250, the evaluation of $R \geq 1$ is simply to determine whether compression is required or not. Whether or not compression is required, a threshold set is used to quantize and store the data. When the number of captured images (K) is incremented in step 290, X is also updated. The values of X and (M-K) tend to track each other, assuming the threshold set was chosen correctly. Therefore, the compression ration (R) would tend to remain constant. The repetitive calculation is simply to insure that the quantization parameters were working according to the desires of the inventor.

This compares with the applicant's Fig. 7, where the number of pictures taken (n) is incremented in step S61, and the compression ratio is updated in step S63.

The examiner notes that both the application and Acharya have target compression ratios and test the available file size and the desired number of pictures to be taken in order to insure that the desired number of pictures will fit in the available storage space. Acharya applies his selected compression ratio to the first image as well as to all succeeding images.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Acharya (6,301,392).

Regarding claim 1, Acharya discloses an electronic camera comprising:

- an imaging device for periodically outputting an image signal of an object (Fig 7, item 730 "Camera");
- a processor subjecting the image signal, outputted from the imaging device, to a signal processing (Fig 7, item 732 "Image Processing Encoding Circuit");
- a calculator for calculating a specific compression ratio capable of compressing a preceding image signal, outputted from the processor and corresponding to a preceding screen, to a specific size (Col 4, lines 61-67 "In order to determine which of the N quantization threshold parameter sets to use, the invention first computes an indexing ratio R [block 245]. The indexing ratio R may be computed by considering a ratio of X, the presently

available storage space, to average space needed to store the remaining number of images to at least approach the minimum M ");

- a compressor for compressing a current image signal, outputted from the processor and corresponding to a current screen appearing after the preceding screen (Col 5, lines 43-47 "the imaging system is ready to capture the next image [block 230] and repeat the operation described in blocks 230 to 290 to guarantee that a pre-specified minimum number M of images can be captured and stored by the imaging system"), using the specific compression ratio (Col 3, lines 16-18 "the image compression...may be performed on the entire image"); and
- a recorder for recording to a recording medium a plurality of screens of compressed image signals created by the compressor (Col 9, lines 13-15 "captured images are processed by an image processing circuit 732 so that they can be efficiently stored in an image memory unit 734").

As noted on page 1, lines 16-20 in the applicant's specification, this invention is intended to ensure that a desired number of images can be stored on a given size of media. Acharya's abstract indicates that he is guaranteeing that a minimum number of quantized image data can be stored in a given storage mechanism. The examiner notes that Acharya meets the applicant's invention in providing assurance to the user that the desired number of images can be stored in the available memory.

Regarding claim 2, Acharya discloses an electronic camera wherein the calculator calculates the specific compression ration based on an arbitrary compression

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ratio, a size of the compressed image signal obtained by compressing the preceding image signal with the arbitrary compression ration and the specific size (Col 4, lines 61-67 "In order to determine which of the N quantization threshold parameter sets to use, the invention first computes an indexing ratio R [block 245]. The indexing ratio R may be computed by considering a ratio of X, the presently available storage space, to average space needed to store the remaining number of images to at least approach the minimum M").

Regarding claim 4, Acharya discloses an electronic camera wherein the first resolution is higher than the second resolution, and the specific size directed to the first recording mode is greater than the specific size directed to the second recording mode (Col 3, lines 3-6 One such image compression technique is based upon the DWT [Discrete Wavelet Transform]" and Fig 2 flowchart item 235 shows "Perform DWT," which then flows to step 240 "Determine Amount [X] of Presently Available Storage", eventually passing to step 285 "Encode and store Quantized Data").

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Acharya as applied to claim 1 above, and further in view of Dunton et al (6,151,069).

Regarding claim 3, Acharya suggests a camera with multiple formats (Col 2, lines 55-56 “digital applications such as still or motion imaging”), but does not specifically disclose a camera with a selector for selecting the desired mode.

Dunton teaches an electronic camera comprising a selector (Col 3, lines 18-19 “Mode selection can be made by the user of the apparatus via mechanical controls”) for selecting one of a first recording mode to create within the recording medium a plurality of still image files respectively accommodating the plurality of screens of the compressed image signals (Col 1, lines 65-66 “the second selection is designed to provide data for still images”) and a second recording mode to create within the recording medium a motion image file collectively accommodating the plurality of screens of compressed image signals (Col 1, lines 63-65 “The first selection of scaling, decorrelation, and encoding is designed to provide video data”), wherein the processor creates the image signal having a first resolution when the first recording mode is selected by the selector and creates the image signal having a second resolution when the second recording mode is selected by the selector, and the specific size is different between the first recording mode and the second recording mode (Col 5, lines 8-11 “the scaling and compression logic may be configured to reduce image size and resolution to yield smaller, less detailed video images, as compared to larger and more detailed still images”).

As suggested by Acharya and taught by Dunton, a multi-purpose camera needs a means for identifying the purpose required. Further, if one of those purposes has a

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more processor intensive function, that means must also provide instructions to the processor to allocate resources accordingly.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a selector switch for identifying the recording mode, and to have that selection also control the means of image compression and storage.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acharya and Dunton as applied to claims above, and further in view of Mizoguchi (6,407,772).

Regarding claim 5, Dunton et al suggest an electronic camera wherein the processor creates one screen of image signal at a first predetermined interval when the first recording mode is selected and one screen of image signal at a second predetermined interval when the second recording mode is selected (Abstract "both still mode and video mode"), but does not specifically disclose a second predetermined interval.

Mizoguchi teaches a camera that can have multiple predetermined intervals (Col 3, lines 8-9 "An arbitrary speed equal to or lower than 60 frames/second can be assigned").

As suggested by Dunton et al and taught by Mizoguchi, repetitive picture taking is a known means of taking multiple still pictures at a given rate. Therefore, it would have been obvious to one of ordinary skill in the art to modify Dunton et al in order to take pictures at a second predetermined interval.

Regarding claim 6, Dunton et al suggest an electronic camera wherein the first predetermined interval is longer than the second predetermined interval (Abstract “both still mode and video mode”), but does not specifically state a second predetermined interval.

Mizoguchi teaches a camera with two different predetermined intervals (Col 1, lines 37-40 “In a movie-photographing operation in a camcorder, the photographing rate is fixed as 60 fields/second...conforming to broadcast standards” and Col 3, lines 8-9 “An arbitrary speed equal to or lower than 60 frames/second can be assigned”).

As suggested by Dunton et al and taught by Mizoguchi, a movie or video rate camera can also have a slower repetitive picture taking rate. Therefore, it would have been obvious to modify Dunton et al in order to take pictures at a predetermined interval that is longer than the video interval.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Fletcher whose telephone number is (703) 305-3464. The examiner can normally be reached on 7:45AM - 5:45PM M-Th, first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached at (703) 308-9644.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

or faxed to:

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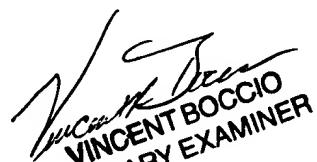
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(703) 872-9314 (for Technology Center 2600 only).

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

JAF
July 12, 2004


VINCENT BOCCIO
PRIMARY EXAMINER